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Date of Deposit July 13, 2004

I hereby certify that this paper and all papers and fees referred to herein are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Box 1450, Alexandria, VA 22313-1450.

Angela L. Boyd

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Robert Ernest Troxler

Group Art Unit: 2636

Serial No.: 10/035,937

Examiner: Trieu, Van Thanh

Filed: December 26, 2001

Docket No.: 1450/2

Confirmation No.: 3607

For: LARGE AREA POSITION/PROXIMITY CORRECTION DEVICE WITH ALARMS
USING (D)GPS TECHNOLOGY

DECLARATION OF PRIOR INVENTION PURSUANT TO 37 C.F.R. § 1.131

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir.

I, Robert Ernest Troxler, hereby declare as follows:

1. I am the sole inventor of the claims of U.S. Patent Application no. 10/035,937 filed December 26, 2001, which relates to devices, systems, and methods for indicating a position of a movable device with respect to a geographical area.
2. I have reviewed Claims 15 and 24 of the subject patent application, and I conceived of the invention defined in those claims at least as early as July 13, 1999, as evidenced by certain pages of Mr. Troxler's Workbook, a copy of which is attached hereto:

3. The pages of Mr. Troxler's Workbook dated prior to July 13, 1999 includes notes describing a movable boundary detection device and related methods and systems as claimed in at least Claims 15 and 24 of the subject patent application. Specifically, the pages describe a GPS-based device.
4. I was the originator of the pertinent subject matter described in the subject Workbook pages of dated prior to July 13, 1999.
5. I worked continuously until the invention was reduced to practice with the filing of U.S. Provisional Patent Application No. 60/258,246 on December 26, 2000.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this Declaration is directed.

By: Robert Ernest Troxler
Robert Ernest Troxler

Date: July 13, 2004

CONFIDENTIAL

COPY



OCT 23, 1997

Conception of the K-9 "Walkright" Electronic
Leash Training Device.

While talking to Geoff Holden in my kitchen, we
Agreed that there was a market for just such a
device. We were discussing patents and I was
describing how alternative users for current inventions
was eligible to receive a patent. I used the
dog leash connector as an example, and Geoff
further encouraged and enhanced the idea.

We immediately went to Lowe's to buy an existing
electronic collar to modify for our testing.

We purchased a Radio Systems UL-250 for
about \$50 for the purpose. Geoff sketched

out a possible switching mechanism, and I

described the electronics of the collar. We

then took the collar to a place in the house

that had voltages and an antenna source to

spoke the collar. The idea is to remove

the RF electronics and put on his switch

to apply the proper voltage to "ring" the

collar. We failed at our first attempt

Read & understood by

Robert T. [Signature] and [Signature]

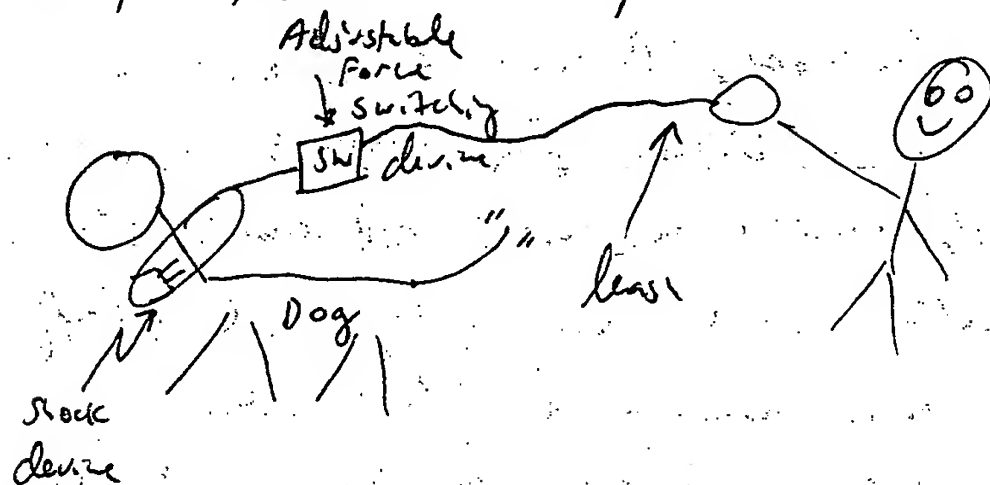
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27-97

Description of device:

The "Shock" collar will be used in a design such that when a predetermined force of the dog pulls his master while walking, a contact signal is applied to the dog through electric Shock, Audible Sound, or Ultrasonic output.



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2.1

Alt. Tol & Sketch

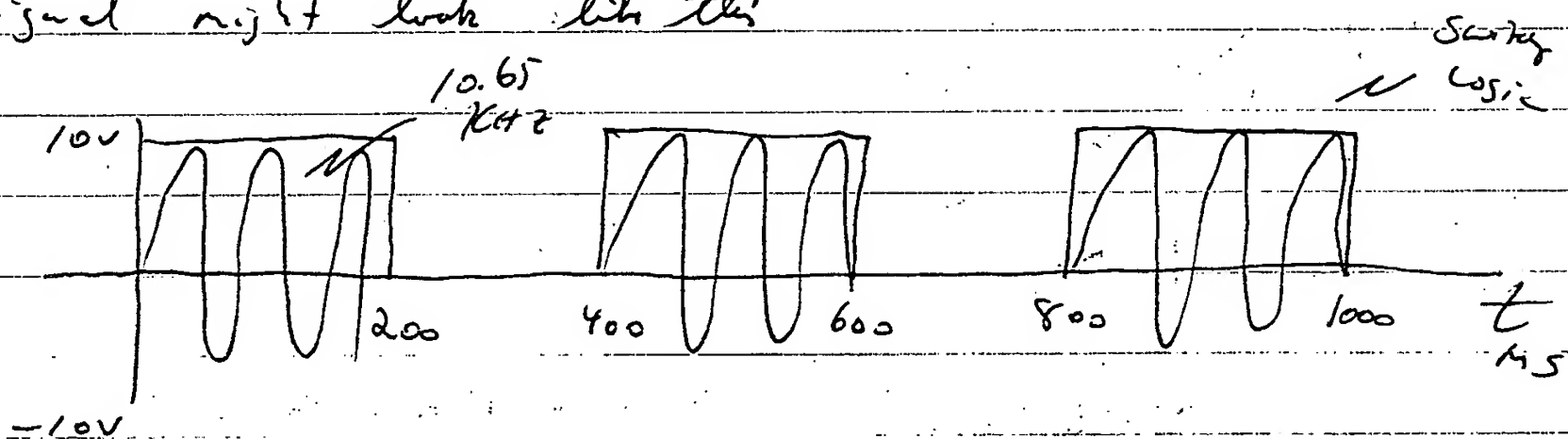
10-30-97

I E-mailed CCutshaw@Radiosys.com

to ASK how the system worked. Was it
coded and modulated I asked? The answer was
that the UL-250 was coded and modulated
But I believe they got the wrong.

The Caller operates at 10.65 KHz and to "ring" it,
one must pulse the Transmitter 3 times/sec.

If a 10 Ω load were on the x-mitter, the
signal might look like this



Note: for the warning signal, the peak voltage may
be at 10V. However, the shock voltage output
would be less. Hence, the field intensity is greater
for the warning to reach further into the yard.

Possibly, the Caller is smart enough to look at
two Amplitudes thru a Comparator OP Amp and
not trip the proper receiver response until the
Voltage were high enough. Could be use a ratio

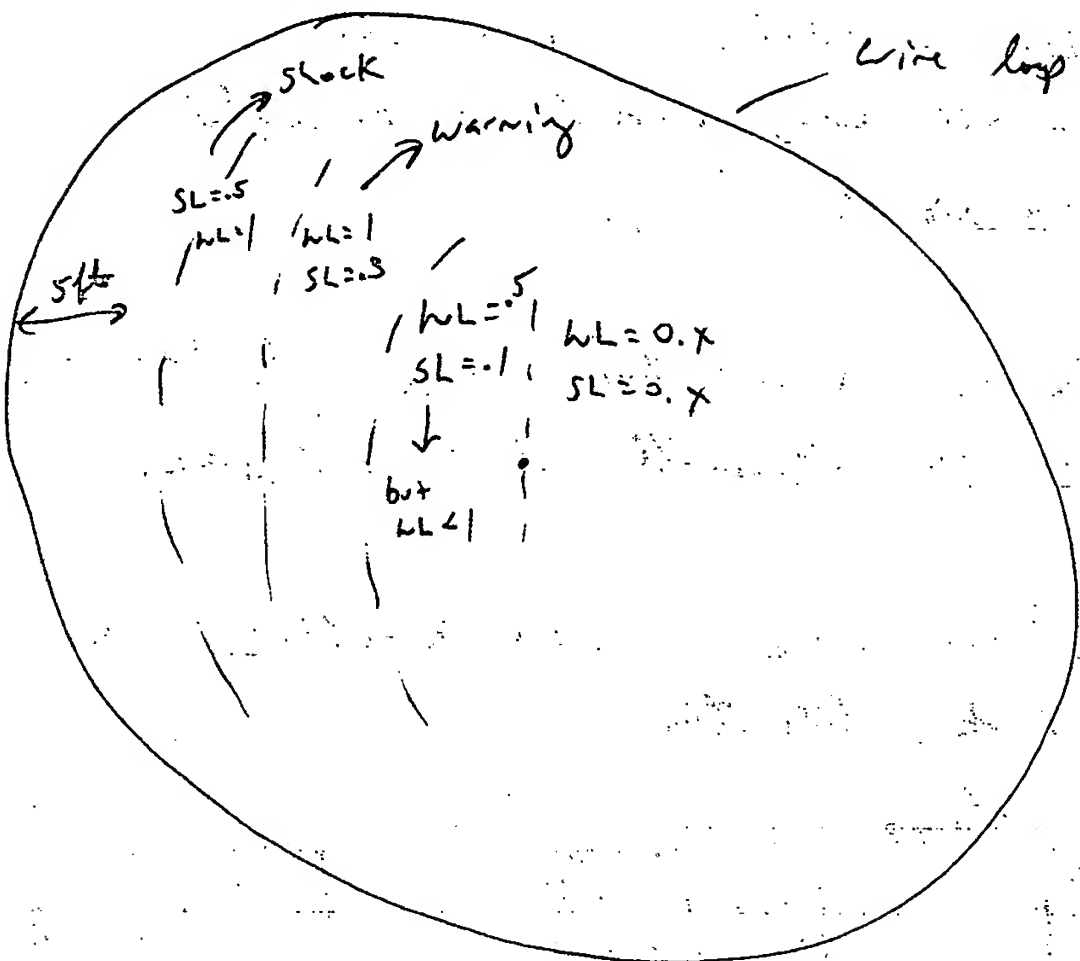
④

in the logic Along w/ peak.

17

Warning level = $1/V_{pp} = NL$

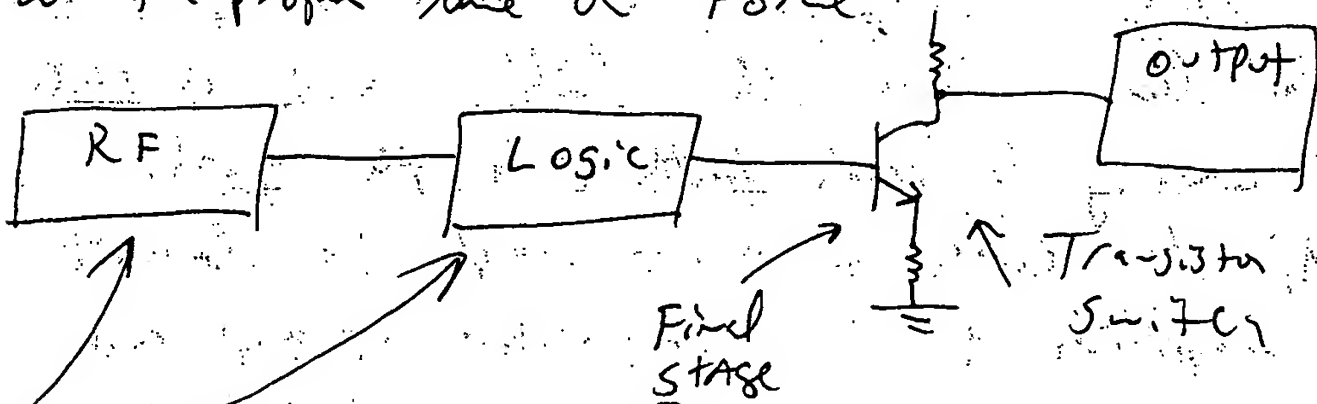
SL = Shock level = $1/2$ Warning level



the Shock
 $\frac{SL}{NL} \geq 0.5$ the Shock

Low

At Any Rate, we will not use the RF Section or Logic. All we need to do is to put a Control Voltage to the transist at at the proper time or Force.



We do not need this!

Just this!

Ant Trail

[Signature]

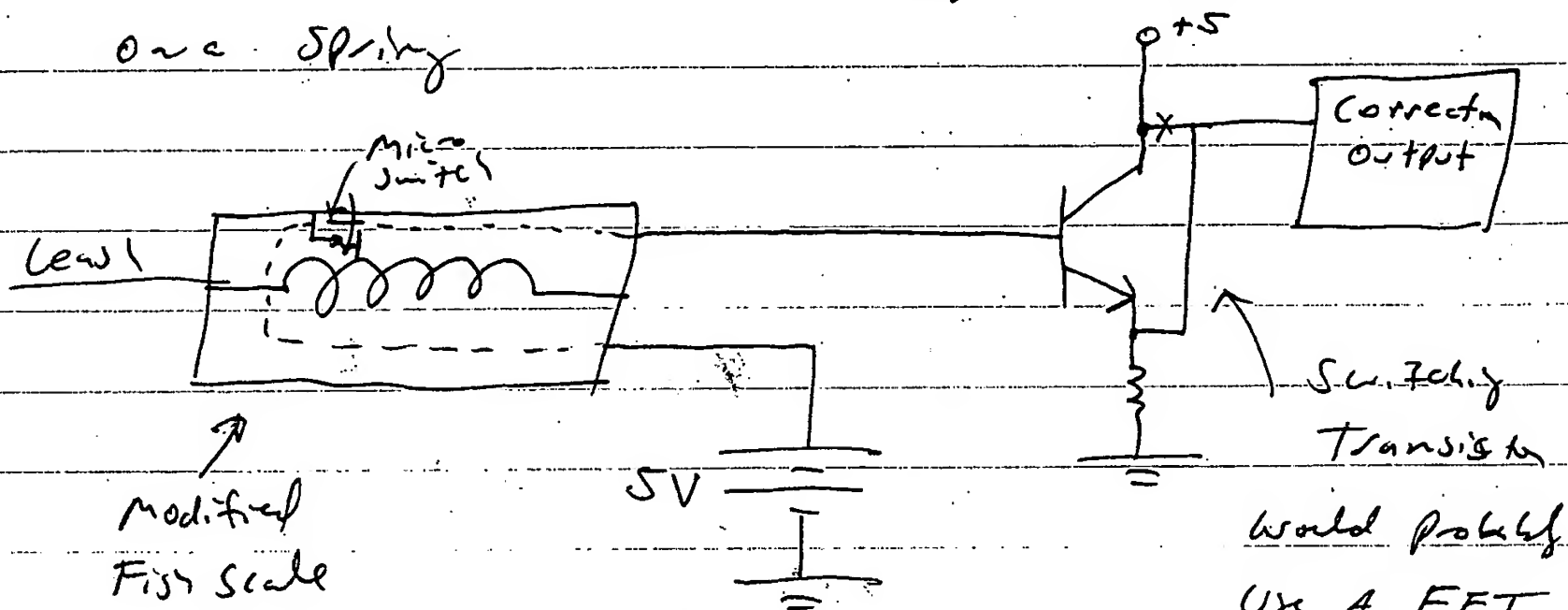
Read 1

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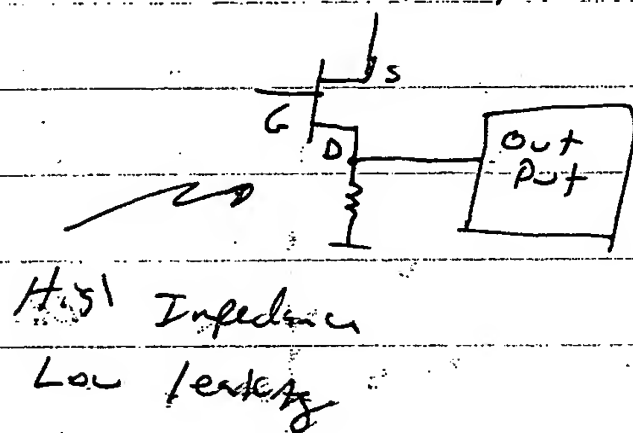
So all we need is an Adjustable Force Sensor,
could be Load cell or simple micro switch
or a spring

any level

the
hook



Use supply on
dog collar



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Read & understood by

Patt Toul

+

[Signature]

⑥

1-10-98

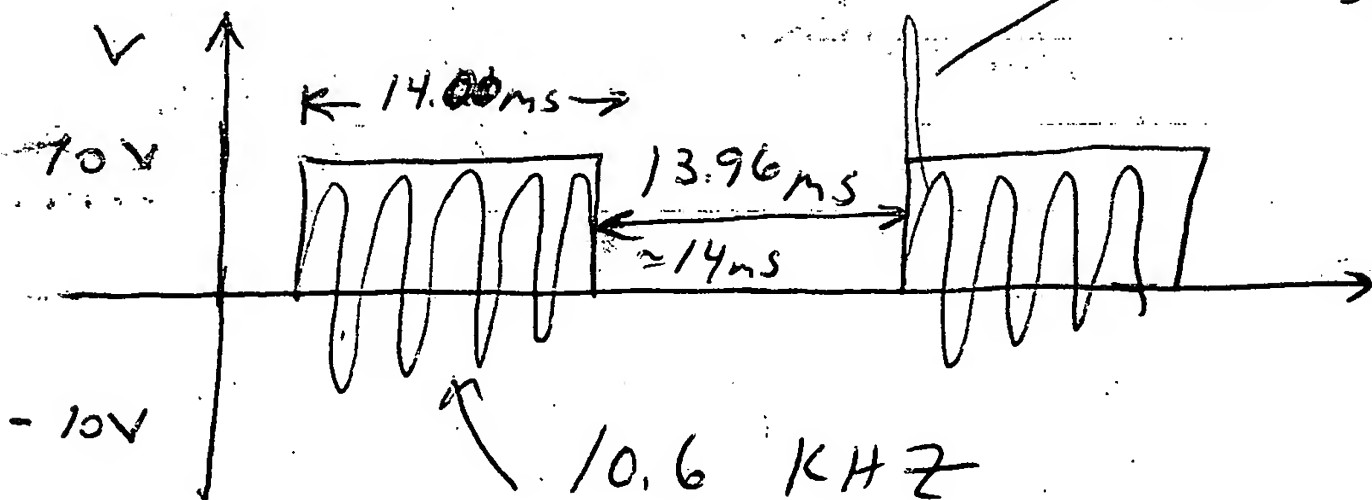
Today I investigated my
Dog Guard Transmitter.

They have 2 systems.

1) 7.45 KHz

2) 10.6[5] KHz
10.8 KHz

my 10.65 KHz system is duty
cycled such that



≈ 6 "rings" 155ms

Chips inside X-mitter

Lm556CN

P1602AB SPI

Lm3900N

m9702 FET

C9 = ~~401~~ 101

C7 = 47μF

C8 = 10μF

C6 = 47J

SUN

SO

THU

16

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MON

GR

7

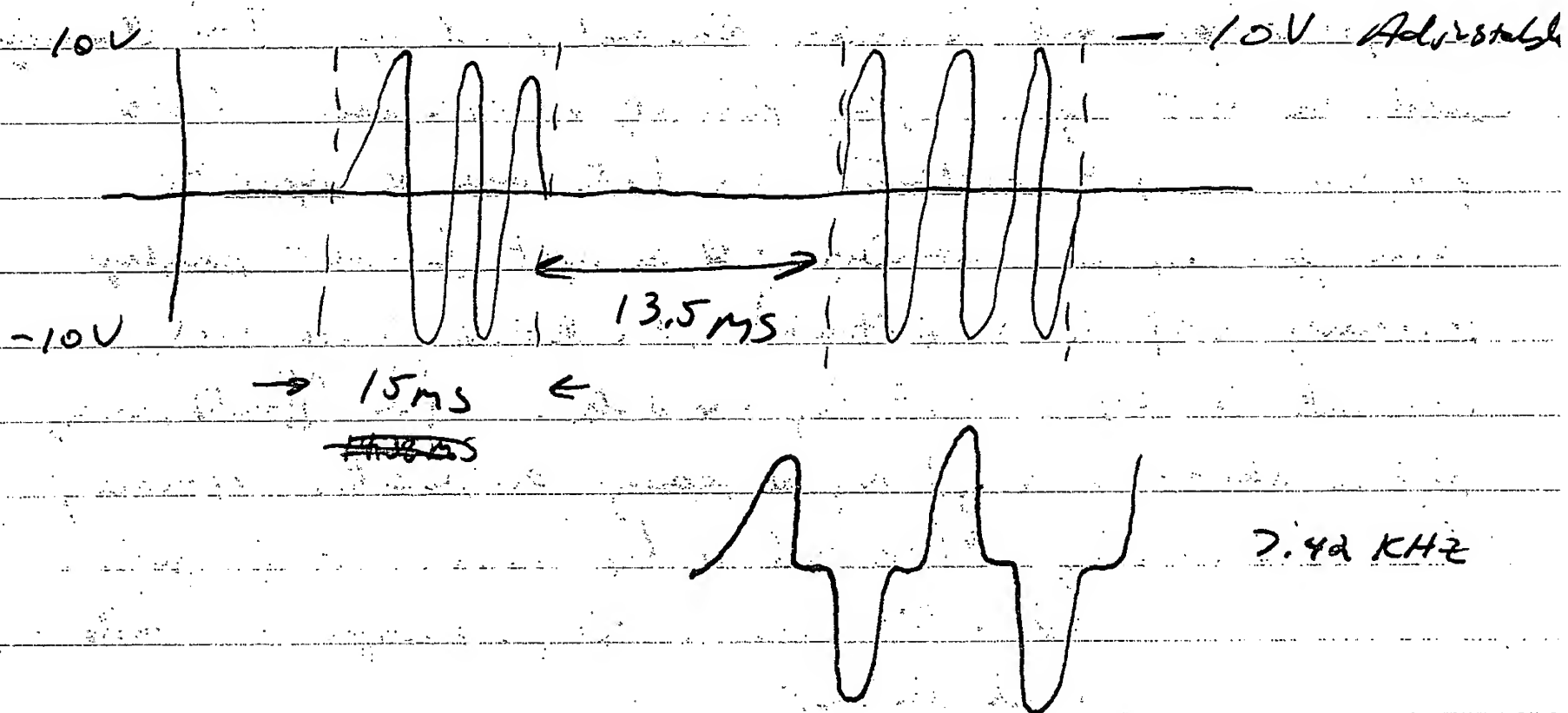
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6

SUN Jan 18 '98

Had my Dog Guard X-mitter Chaged to 7.45 KHz
so that Boze's Collar would work at Cissy's House.
His Collar was also Adjusted.

X-mitter waveforms. Look Bad



MON Jan 19, '98

According to A paper at the TRB Conference,
GPS is possible to measure down to the mm range.
Incorporate this into A Collar that does not need a
Wire. Simply Program in the coordinates. One could
Walk the Boundary (on drive) and let A Program
Actually load the coordinates in to the system.

(8)

Wed Jan 21 1998

3-6

We could use the radio system VL-250 Shock
Collar and integrate it with the collar with the GPS system. The
antenna and collar w/ GPS with the shock and a audible alarm would
be one piece. The audible alarm could be a radio boundary (10m)
and the shock at say 2 meters. Better accuracy could be obtained
w/ Differential GPS. The antenna could be a minitip active/passive
or maybe a loop around the collar. Been most point up. The Boundary
could be set w/ a laptop, Palm top, or other means. Could
program X Y Z coordinates. Coordinates could be input by
hand off a map too. Corridor could be input to prevent Boundary
to boundary (Keep dog out of streets). A Call Back locator could
be used to obtain lost dog coordinates. For differential mode,
A base station (stationary) may be necessary on the site. A boundary
with a boundary could be used to keep animal out of garden.

- need to find low power unit for prototype or build one.
- Check the "net"

- Probably best for Large animal Containment

1-28-98 Motorola, Sirt, Gama, tremble rule system

2-10-98 Been getting parts for Animal Containment off the net.
Could also use Velocity Predictor algorithm Use Velocity
to calculate expected time-distance to boundary.

7-7-98 Contacted Motorola for parts for GPS Dog collar

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3-6-99 -

PP-86-5

Low Cost Magnetic Dog fence.

Instead of using RF for fencing, use

A very small D.C. current loop and

Anisotropic magnetoresistive sensors. Here, we

detect the H field produced by the

current loop.

(Still Looking & collecting Information on H field
GPS XYZ Dog fence.)

Attributes - Low power (Battery operated transmitter)
To investigate Spatial Resolution (not function of Angle)
Cheap

Could possibly modulate the D.C. field and obtain
Dog Head orientation from Earth mag field and to correct for
orientation if needed.

Could also use PASSIVE system whereby Iron stakes are deeply
driven into soil at the Boundary. Detect these stakes.
Possible Problems w/ other iron or metal pipes in the area.
Stakes could keep dogs out of garden areas.